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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,731	08/31/2001	Susumu Takahashi	1186.1019	8415

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EXAMINER

RAO, SHRINIVAS H

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,731

Applicant(s)

TAKAHASHI ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-28, 41-43, 45-54 and 56-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 9-28, 41-43, 45-54, 56-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

Applicants' amendment filed on November 09, 2005 has been entered and forwarded to the Examiner on November 16, 2005.

Therefore claims 9,17,20,26,41,49 ,52, 58 and 61 as amended by the amendment and claims 10-16,18-19,21-25,27-28, 42-43,45-48, 50-51,53-54,56-57 and 59-60 as previously recited are currently pending in the Application.

Claims 1-8, 29-40,44 and 55 have been cancelled.

Claim Rejections - 35 USC Section 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-28,41-43,45-54 and 56-61 are rejected under 35 U.S.C. 103(a) as being obvious over Tanabe et al. (U.S. Patent No. 6,118,586 herein after Tanabe) previously applied and further in view of Japanese Utility Model No. 258847 (LGZ Landis, herein after Landis) (for Applicants' convenience U.S. Patent Pub. No. 2003/0151784, wherein English translation of relevant portions

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of Landis is enclosed e.g. para 0007) as previously applied and further in view of Ogawa et al. (U.S . Patent No. 6,088,076, herein after Ogawa).

With respect to claims 9, 20 and 52 Tanabe describes a display device which comprises an array of pixels arranged in a matrix and forms an image to be displayed comprising an array of diffraction grating cells arranged in a matrix, (co1.2 lines 60-65, etc.) each cell comprising blazed type or binary type curved gratings. (Tanabe figures 2/3, etc. and Col. 10 lines 63 to 67).

The limitation of wherein each side of each diffraction grating cell measures between about 5um to about 300 um is not specifically describes by Tanabe .

However Landis (Japanese Utility patent No. 258847) and (2003/151784, para 0007) describes a diffraction grating pattern of 0 to 300 um to provide micro-characters having desired properties including anti-counterfeiting means used in notes credit cards etc.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Landis (Japanese Patent No. 258847's) a diffraction grating pattern of 0 to 300 um (i.e wherein each side of each diffraction grating cell measures between about 5um to about 300 um) in Tanabe's device. The motivation to make the above combination is to provide micro-characters having desired properties including anti-counterfeiting means used in notes credit cards etc. (JP '847 patent) .

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The presently newly added limitation , "wherein said diffraction grating cells are located at positions corresponding to the pixels. " is not specifically mentioned by the above applied Tanabe or Landis references.

However, Ogawa , a patent from the same field of endeavor, describes in col.4 lines 12 to 25 etc. wherein said diffraction grating cells are located at positions corresponding to the pixels to provide LCD which prevents color intensification and which accurately regenerates white, thus ensuring the display of good-quality color images with excellent color images with an excellent color balance.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Ogawa's diffraction grating cells are located at positions corresponding to the pixels in Tanabe and Landis device The motivation to make this combination is to provide LCD which prevents color intensification and which accurately regenerates white, thus ensuring the display of good-quality color images with excellent color images with an excellent color balance. (Ogawa col.2 lines 15 to 25).

With respect to claims 10, 21,42,53 Tanabe describes the optical film according to claim 9 , wherein said gratings of different grating cells contain different profiles. (col. 5 lines 34-48 and Col. 10 lines 63 to 67).

With respect to claims 11 ,22, 43,54 Tanabe describes the optical film according to claim 9 , wherein said gratings.of dilerent grating cells contain the same profile and arranged in parallel with each other. (col. 5 line 30-34). (LCD layer and display (cl.9) col.2 lines 56-62 and Col. 10 lines 63 to 67).

With respect to claims 12, 23 Tanabe describes the optical film according

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to one of claims 9 wherein said gratings of each grating cells include at least two grating pitches. (col. 7 lines 17-30 and Col. 10 lines 63 to 67).

With respect to claims 13, 24, 45,56 Tanabe describes the optical film according to claim 9, wherein an angle of a slope of the gratings of different rating cells is uniform. (Tanabe figure 2 and Col. 10 lines 63 to 67).

With respect to claims 14, 46 Tanabe describes the optical film according to claim 9 wherein a surface of said diffraction grating cells of each of the grating cells is provided with a reflection layer. (Figure 1 ,9 and Col. 10 lines 63 to 67).

With respect to claims 15, 47 Tanabe describes the optical film according to claim 9, wherein each of the gratings of each of the grating cells has a gentle slope and a steep slope in a cross section and a surface of the gentle slope is provided with a reflection layer. (figures 2 and 3, and see above rejections and Col. 10 lines 63 to 67,see rejections under cls. 19,51 also).

With respect to claims 16, 48 and 57 Tanabe describes the optical film according to claims 9, wherein fine rectangular or elliptic projections or recesses are formed on a surface of said diffraction grating cells with a short axis thereof agreeing with a direction of juxtaposition of said gratings. (Tanabe col. 16 lines 23-35, and Tenantable figs. 2,3 and Col. 10 lines 63 to 67).

With respect to claims 17, 49 ,58 Tanabe describes the display device according to one of claims 9 to 11, wherein said liquid crystal display layer comprises an

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array of pixels arranged in a matrix', and said diffraction grating cells and said array of pixels show a one-to-one correspondence. (Tanabe example 8 , col.16 lines 23-35 and Col. 10 lines 63 to 67).

With respect to claim 18 Tanabe describes the display device according to one of claims 9 to 11 , wherein said liquid crystal display layer comprises array of pixels . (Tanabe col. 6 line 62 to col. 7 line 6 and Col. 10 lines 63 to 67).

With respect to claims 27, and 59 Tanabe describes LCD layer having an array of pixels arranged in a matrix', and a pitch of arrangement of said array of diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa. (Tanabe col. 16 line 36 to 44 and Col. 10 lines 63 to 67).

With respect to claim 19, 51 Tanabe describes the display device according to claims 9 to 11 , wherein the grating has a gentle slope and a steep slope in a cross section and the gentle slope is directed to above a display screen of said display device. (Tanabe figures 2 to 6 etc. and Col. 10 lines 63 to 67) .

With respect to claim 41 Tanabe describes a display device comprising : a liquid crystal display layer which comprises an array of pixels arranged in a matrix and which forms an image to be displayed', and a light reflecting optical film which is arranged on a rear surface of the liquid crystal display layer (figures 4,5 etc.) and comprises an array of diffraction grating cells arranged in a matrix, each cell comprising curved gratings, wherein said gratings of each of the grating cells include at least two grating pitches. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67) and wherein each

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side of each diffraction grating cell measures between about 5um to about 300 um (rejected for reason set out under claims 1 and 20 above).

With respect to claim 50 Tanabe describes the display device according to one of claims 41 to 43, wherein said liquid crystal display layer comprises an array of pixels arranged in a matrix', and a pitch of arrangement. of said diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67) of cross section and the gentle slope is directed to above a display screen of said display.

With respect to claim 60 Tanabe describes the display device according to one claims 52 to 54, wherein the grating has a gentle slop and a steep slope in a device. (Tanabe figure 6 , col. 6 last line to col. 7 lines 1-2).

With respect to claim 61, Tanabe describes a display device including a liquid crystal display layer (Tanabe col.2 line 54)which comprises an (sic any) array of pixels arranged in a matrix and forma an image to be displayed , a plurality of drive electrodes in proximity to the liquid crystal display layer (assuming arguendo no new matter exists) and a light reflecting optical film including a plurality of diffraction grating cells arranged in a matrix, each of the diffraction grating cells including at least one of a blazed type and a binary type grating, wherein the drive electrodes from the light reflecting optical film and wherein each of the drive electrodes includes one of the diffraction grating cells and wherein the drive electrodes form the light reflecting optical film, and wherein each of the drive electrodes includes one of the diffraction grating cells, wherein each side of each diffraction grating cell measures

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between about 5 p,m and about 300 pm and wherein said diffraction grating cells are located at positions corresponding to the pixels. (rejected for reasons set out under claims 9, 20 etc.)

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is (571) 272-1718. The examiner can normally be reached on 8.00 to 5.00.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application' Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



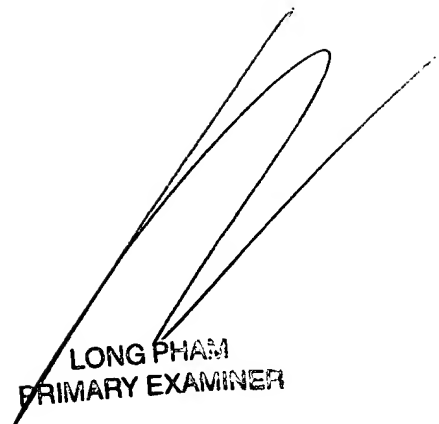
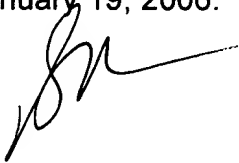
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Steven H. Rao

Patent Examiner

January 19, 2006.



LONG PHAM
PRIMARY EXAMINER